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10/700,527	11/05/2003	Naofumi Yamamoto	016907-1580	5912

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/700,527	YAMAMOTO ET AL.
	Examiner	Art Unit	
	Steven Kau	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 November 2003_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _11/5/2003_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _11/5/2003, 5/25/2004_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement (IDS) submitted on November 5, 2003 is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure

statement is being considered by the examiner. However, the IDS submitted on

November 24, 2004 is not compliance with the provisions of 37 CFR 1.97 because there

was no English translation for the disclosed literature. Accordingly, the information

disclosure statement is NOT considered by the examiner.

Specification

2.   The abstract of the disclosure is objected to because there is an ambiguous

statement cited "In an image region discrimination section in an image processing

section, a characteristic signal calculation result obtained by hardware is subjected to

macro-scoped correction and macro-discrimination by a processor." (emphasis added)

To make it clear, it may be written as "An image region discrimination section in an

image processing section, a characteristic signal calculation result obtained by

hardware is subjected to macro-scoped correction and macro-discrimination by a

processor"

Correction is required. See MPEP § 608.01(b).

Drawings

3.   The drawings are objected to under 37 CFR 1.83(a) because they fail to show as

described in the specification. Paragraph 0012 of the disclosure cited "an arithmetic

section that reads out the characteristic signal stored in the storing section and

executes a predetermined arithmetic operation", but there is no arithmetic section,

circuit, operation or process shown in the disclosed drawings.

Corrected drawing sheets in compliance with 37 CRF 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should included all the figures appearing on the immediate

prior version of the sheet, even if only one figure us being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency.

Additional replacement sheets may be necessary to show the renumbering of the

remaining figures. Each drawing sheet submitted after the filing date of an application

must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

application will be notified and informed of any corrective action in the next Office

action. The objection to the drawing will not be held in abeyance.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 1, 6 and 15 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

With regard to claim 1, recited "....and an image processing section that

executes a color conversion process, a filter process and a tone process for the image

signal in accordance with the discrimination signal output from the synthesizing process

section" (emphasis added).). Applicant failed to particularly point out the underlined

words. In addition, there is insufficient basis for this limitation in the claim.

In view of the disclosed specification, the "filter process" are interpreted as high-

frequency, high-pass, low-pass, or smoothing filtering process.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, for the same

reason as discussed above for claim 1 rejection.

With regard to claim 6, recited "The image processing apparatus according to

claim 2, wherein said at least one characteristic signal calculation section calculates a

brightness from the input image signal, expresses the brightness by three values, and

produces a halftone characteristic signal and a white background characteristic signal"

(emphasis added). Applicant failed to particularly point out the underlined words. In

addition, there is insufficient basis for this limitation in the claim.

In view of the disclosed specification, the "three values" of brightness are

interpreted as threshold values, index values, or numeric values.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Suzuki (US 5,134,667) in view of Yamazaki (US 6,690,487).

With regard to claim 1, Suzuki discloses an area discriminating system, in that he

teaches an image processing apparatus comprising: a characteristic signal calculation

section {e.g. Figure 19, the hue detect circuit, calculating a difference between the

maximum and minimum values, and the large area discriminating circuit shown in

Figure 1 calculates an average value of edge information} (col 2, lines 15-26 & col 5,

lines 43-63) that calculates a characteristic amount of an input image signal (Figure 1,

col 5, lines 43-63); a conversion process section that executes a conversion process for

decreasing a signal amount of a characteristic signal calculated by the characteristic

signal calculation section {e.g. converts RGB signals to YMCS signals and adjust the

color balance} (col 6, lines 10-35, col 10, lines 65-67 & col 11, lines 1-27); a storing

section that stores the characteristic signal that is converted by the conversion process

section (col 10, lines 65-67 & col 11, lines 1-27); an arithmetic section that reads out the

characteristic signal stored in the storing section and executes a predetermined

arithmetic operation (Figure 14, col 22, lines 60-68 & col 23, lines 1-23); and an image

processing section {e.g. a digital color image process system, Figure 17} (Figure 17, col
1, lines 14-15) that executes a color conversion process {e.g. converting RGB signals to
YMSK signals} (Figure 2, col 6, lines 10-35), a filter process {e.g. smoothing, low-pass
and high-pass filtering} (col 15, lines 49-59) and a tone process {e.g. tone process with
modulation} (col 10, lines 34-44) for the image signal in accordance with the
discrimination signal output from the synthesizing process section (Figure 17, col 1,
lines 14-15).

Suzuki differs from claim 1, in that he does not teach a synthesizing process
section that outputs a discrimination signal by synthesizing an arithmetic result of the
arithmetic section and the characteristic signal calculated by the characteristic signal
calculation section.

Yamazaki discloses a method and apparatus for image processing, in that he
teach that a synthesizing process section that outputs a discrimination signal by
synthesizing an arithmetic result of the arithmetic section and the characteristic signal
calculated by the characteristic signal calculation section {e.g. combinations of
arithmetic operations with operation expressions, processing with LUTs, MTX operation
(chroma weight computation), processing with filters, etc.} (Figures 4 & 5, col 9, lines
45-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the
time of the invention to have modified Suzuki to include a synthesizing process section
that outputs a discrimination signal by synthesizing an arithmetic result of the arithmetic
section and the characteristic signal calculated by the characteristic signal calculation

section taught by Yamazaki to reduce shadow, and to improve sharpness and print quality (col 1, lines 27-42).

With regard to claim 2, in accordance with claim 1, Suzuki teaches that the characteristic signal calculation section comprises at least one characteristic signal calculation section {e.g. Figure 19, the hue detect circuit, calculating a difference between the maximum and minimum values, and the large area discriminating circuit shown in Figure 1 calculates an average value of edge information} (col 2, lines 15-26 & col 5, lines 43-63).

With regard to claim 3, in accordance with claim 2, Suzuki teaches that at least one characteristic signal calculation section calculates a linear edge characteristic signal for each pixel of the input image signal, and outputs an edge characteristic signal corresponding to the calculated degree of linear edge {e.g. mixing an edge emphasis signal and a smooth signal} (Figures 5 & 6, col 16, lines 29-37).

With regard to claim 4, in accordance with claim 2, Suzuki teaches one characteristic signal calculation section outputs a halftone-screen characteristic signal indicative of presence/absence of a halftone-screen region with respect to the input image signal {e.g. screen generator sets up a threshold matrix corresponding to such a halftone cell} (col 12, lines 13-35).

With regard to claim 5, in accordance with claim 2, Suzuki teaches at least one characteristic signal calculation section outputs an achromatic characteristic signal indicative of a characteristic signal of a chroma saturation of a pixel with respect to the input image signal {e.g. edge processing determines whether the color at that time is a

necessary color or not. It the input image is a black area, the chromatic signals of YMC are not emphasized – saturated} (col 9, lines 8-14).

With regard to claim 6, in accordance with claim 2, Suzuki teaches that at least one characteristic signal calculation section calculates a brightness from the input image signal, expresses the brightness by three values, and produces a halftone characteristic signal and a white background characteristic signal {e.g. the calculation produces an equivalent lamination signal} (col 20, lines 63-68 & col 21, lines 1-6).

With regard to claim 7, in accordance with claim 1, Suzuki teaches that the conversion process section executes a conversion process for decreasing a resolution and a signal bit amount of the characteristic signal {e.g. minimum resolution is set} (col 17, lines 32-47).

With regard to claim 8, in accordance with claim 1, Suzuki teaches that the image processing section includes a color conversion section that executes a color conversion of the image signal in accordance with the discrimination signal, a filter section that executes a filtering process in accordance with the discrimination signal, and a tone processing section that executes a tone processing in accordance with the discrimination signal (Figure 2, col 6, lines 10-35).

With regard to claim 9, in accordance with claim 8, Suzuki teaches that the color conversion section converts RGB image signals to YMCK density signals, using a text region conversion table or a photo region conversion table in accordance with the discrimination signal (Figure 2, col 6, lines 10-35 & col 9, lines 11-27).

With regard to claim 10, in accordance with claim 8, Suzuki teaches that the filter section executes the filtering process using a high-frequency emphasis filter and a smoothing filter in accordance with the discrimination signal {e.g. high-pass filter for detecting high frequency component} (Figure 1, col 5, lines 18-36).

With regard to claim 11, in accordance with claim 8, Suzuki teaches that the tone process section executes the tone process using a text region pattern and a photo region pattern in accordance with the discrimination signal {e.g. detect size of the original (document region as well as graph region} (col 7, lines 63-67, col 8, lines 1-20 & col 9, lines 11-38).

With regard to claim 12, in accordance with claim 1, Suzuki teaches that the arithmetic section reads out the characteristic signal stored in the storing section and performs an arithmetic operation for only a macro-scoped correction process {e.g. arithmetic operation is controlled by a latch circuit, and arithmetic operation has to be able to read data from a memory} (Figure 14a, col 22, lines 49- 67 & col 23 lines 1-24).

With regard to claim 13, in accordance with claim 1, Suzuki teaches that the arithmetic section reads out the characteristic signal stored in the storing section and performs, in accordance with a preset process mode, an arithmetic operation for a macro-scoped correction process and a macro-discrimination process, or an arithmetic operation for only the macro-scoped correction process (Figure 14a, col 22, lines 49- 67 & col 23 lines 1-24).

With regard to claim 14, in accordance with claim 1, Suzuki teaches that the arithmetic section reads out the characteristic signal stored in the storing section and

performs an arithmetic operation for a macro-scoped correction process and a macro-discrimination process (Figure 14a, col 22, lines 49- 67 & col 23 lines 1-24).

With regard to claim 15, the structure elements of apparatus claim 1 perform all steps of method claim 15. Thus claim 15 is rejected under 103(a) for the same reason discussed in the rejection of claim 1.

With regard to claim 16, the structure elements of apparatus claim 12 perform all steps of method claim 16. Thus claim 16 is rejected under 103(a) for the same reason discussed in the rejection of claim 12.

With regard to claim 17, the structure elements of apparatus claim 13 perform all steps of method claim 17. Thus claim 17 is rejected under 103(a) for the same reason discussed in the rejection of claim 13.

With regard to claim 18, the structure elements of apparatus claim 14 perform all steps of method claim 18. Thus claim 18 is rejected under 103(a) for the same reason discussed in the rejection of claim 14.

Correspondence Information

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement is traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).
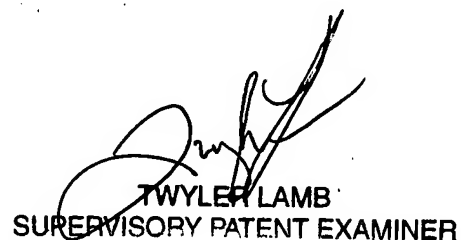
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is (571) 270-1120. The examiner can normally be reached on Monday to Friday, from 8:30 AM – 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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May 17, 2007

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SUPERVISORY PATENT EXAMINER